Section 1:

Burden and Overview of the Problem

Obesity has historically been viewed as an individual issue, with an individual solution. However, with the enormous increases in rates of overweight and obesity and the ensuing effects on society, obesity is now recognized as a critical public health problem. In the United States and in South Carolina, obesity is having a substantial negative impact on life expectancy, quality of life, and the economy. As society seeks solutions to this overwhelming epidemic, it is clear that overweight and obesity are deeply complex issues, rooted in behavioral, biological, cultural, and social factors.

> "If you looked at any epidemic -- whether it's influenza or plague from the Middle Ages -- they are not as serious as the epidemic of obesity in terms of the health impact on our country and our society." (Dr. Julie Gerberding, Director of the Centers for Disease Control and Prevention (CDC), in a speech delivered on Feb. 20, 2004)

Section 1 provides a starting point by:

- presenting an overview of the extent of the problem
- providing info on determining weight status
- identifying the lifestyle factors which influence the escalating trends
- discussing the impact of overweight and obesity towards the prevalence of associated chronic diseases
- outlining the associated economic costs
- describing the impact of health disparities

Determining Weight Status

The most commonly accepted measure of overweight and obesity for both children and adults is the ***Body Mass Index*** (BMI)**, that is calculated using an individual's height and weight. Adults are considered underweight if their BMI is less than 18.5, normal weight (healthy weight) if their BMI is 18.5-24.9, overweight if their BMI is 25.0-29.9, and obese if their BMI is 30.0 or higher (figure 1). Obesity is further categorized as Class I (BMI 30.0-34.9); Class II (BMI 35.0-39.9); and Class III (BMI >40.0). Class III obesity, once called morbid obesity, is now referred to as clinically severe obesity.

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 & above	Obese

Figure 1

When an individual is evaluated in a clinical setting, ***waist circumference*** (WC) should also be measured along with BMI. The WC measurement is a tool to assess abdominal obesity, which is an independent risk factor for diseases. Men who have a WC of 40 inches and women who have a WC of 35 inches are at a higher risk of diabetes, high blood pressure, high lipid levels, and cardiovascular disease (CVD) due to excess abdominal fat *(NHLBI).* (figure 2, next page)

**** Bolded terms are in the glossary, Appendix C**

Classification of Overweight and Obesity by BMI, Waist Circumference, and Associated Disease Risks				
	BMI	Obesity Class	Disease Risk* Relative to Normal Weight and Waist Circumference**	
			Men 40 in. or less Women 35 in. or less	***Men >40 in. Women > 35 in.***
Underweight	<18.5			
Normal +	18.5 - 24.9			
Overweight	25.0 - 29.9		Increased	**High**
Obesity	30.0 - 34.9	**I**	High	**Very High**
Obesity	35.0 - 39.9	**II**	Very High	**Very High**
Clinically Severe Obesity	>40	**III**	Extremely High	**Extremely High**
* Disease risk for Type 2 Diabetes, Hypertension, and CVD				
** Increased waist circumference can also be a marker for Increased risk even in persons of normal weight.				

Figure 2

The term obesity is not used when describing children and youth. Instead, children and youth are said to be at risk of overweight or overweight. This terminology is used because children and youth are actively growing and their weight may change significantly during the growth period. Because ideal weight for children and youth is dependent on age and gender as well as height, adult BMI charts are not appropriate for children. BMI-for-age growth charts are used to determine a child's BMI percentile as compared to other children of the same age and gender. Children and youth who are between the 85th and 95th percentiles are said to be at risk of overweight; children and youth who exceed the 95th percentile on these charts are said to be overweight *(figure 3).*

Percentile	Category
Less than 5th	**Underweight**
5th to 84th	**Normal**
85th to 94th	**At risk of overweight**
95th and higher	**Overweight**

Figure 3

Overweight and Obesity

National: Adults

Although the prevalence of overweight and obesity has steadily increased over the past decade, much of this increase is due to levels of obesity rather than overweight.

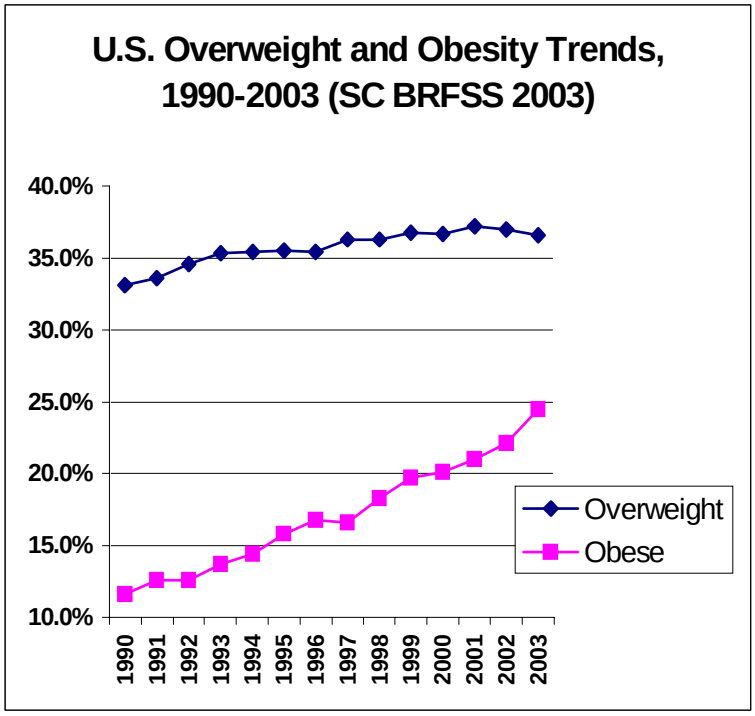


Figure 4

The rates of obesity have more than doubled since 1990. In 1990, an estimated 11.6% of U.S. citizens were obese; in 2003, an estimated 24.5% were classified as obese. During the same time period, the rate of overweight has only increased slightly.

The incidence of obesity among adults rises steadily for each successive age group until the 65-74 year old bracket, where it begins to decline. Despite that, the obesity rate for 65-74 year olds has continually risen during the past 40 years. Specifically, the percentage of obese women between the ages 65-74 has risen from 23 to 39% while the percentage of obese men has grown from 10% to 33%. With the enormous projected future increase in the number of US citizens in this age group, the implications of the obesity epidemic among older adults could potentially have substantial economic and social effects on all generations *(American Federation for Aging Research, 2005).*

"If obesity is left unchecked, almost all of Americans will be obese by 2050. Obesity is a normal response to the American environment."

Dr. James Hill, Director for Human Nutrition, University of Colorado

South Carolina: Adults

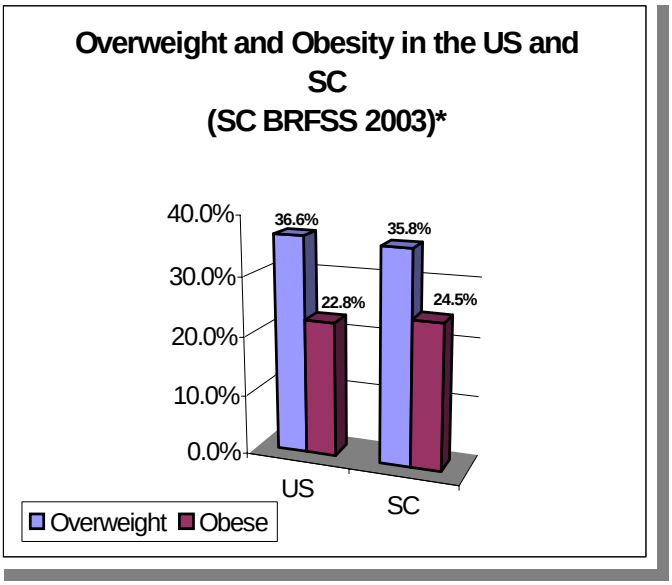


Figure 5

More than half of all Americans are overweight or obese, and South Carolinians are not an exception. In 2003, South Carolina's had the 13th worst obesity rate in the nation *(figure 5)*

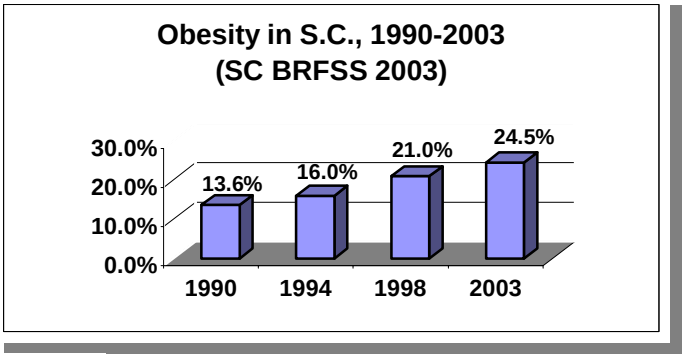


Figure 6

Similar to national trends, obesity rates in South Carolina have nearly doubled since 1990 *(figure 6)*

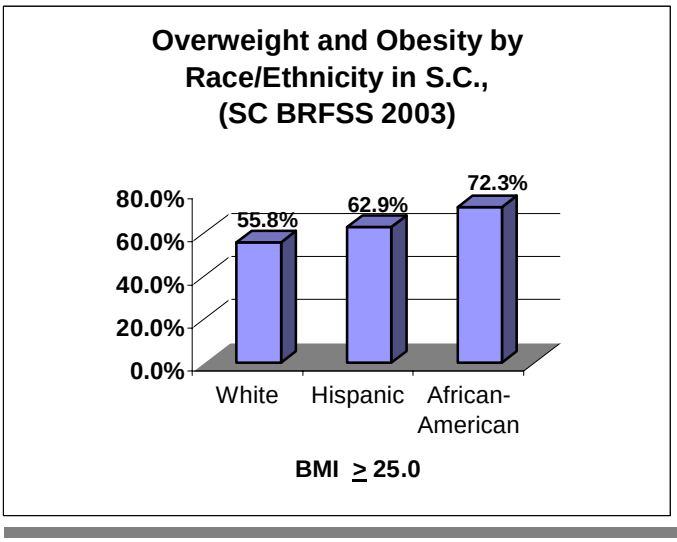


Figure 7

When examined across race/ethnicity in South Carolina, a larger proportion of African-Americans in the state are overweight or obese (72.3%) as compared to Hispanics (62.9%) and whites (55.8%) *(BRFSS 2003)* *(figure 7)*

**** Behavioral Risk Factor Surveillance System***

When examined across gender, a higher percentage of men (66.8%) than women (53.9%) in South Carolina are overweight or obese *(BRFSS 2003).*

Obesity levels are considerably higher among African-American women. In South Carolina, close to half of all African-American women are obese (44.8%) as compared to only 19.0% of white women.

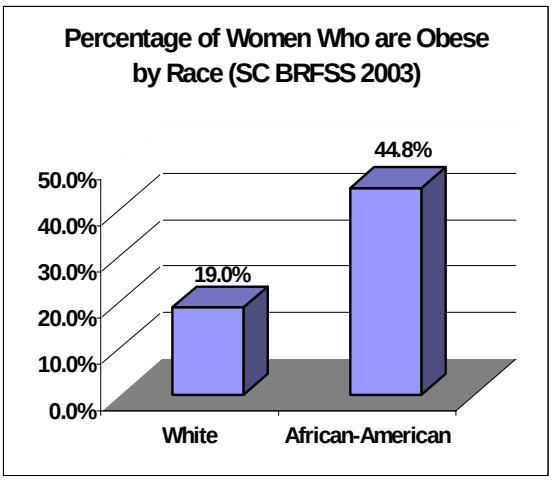


Figure 8

National: Adolescents and Children

If obesity trends continue, this generation of America's children will be the most obese generation in American history. Implications for the national health care system are staggering, but the impact on the individual health and well being is perhaps even more devastating.

Overweight children are more likely to miss school and experience problems with low self-esteem and depression. (*Chicago Consortium to Lower Obesity in Chicago Children*). In contrast, healthy behaviors in children and youth can have a positive impact on academic performance through improved concentration, reduced sickness, and reduced behavior problems *(Action for Healthy Kids, 2004).*

"Overweight adolescents have a 70 percent chance of becoming overweight or obese adults..."

U.S. Department of Health and Human Services. (2001)

South Carolina: Adolescents

Nearly 12 percent of all South Carolina high school students are overweight, with males more likely to be overweight than females (14.6% vs. 8.9%). There are differences by race/ethnicity for both overweight and at risk of overweight. While 12.9% of all high school students are considered at risk of overweight, this rises to 17.3% among Hispanic high school students. Variations for overweight prevalence are more pronounced. For example, 15.1% of African-American high school students are considered overweight, compared to 9.1% of white students. The overweight rate for African-American females is more than three times higher than white females (14.2% vs. 4.3%), which places these young girls at risk for weight problems persisting into adulthood *(YRBS - **Youth Risk Behavior Surveillance** - 1999). (Figure 9)*

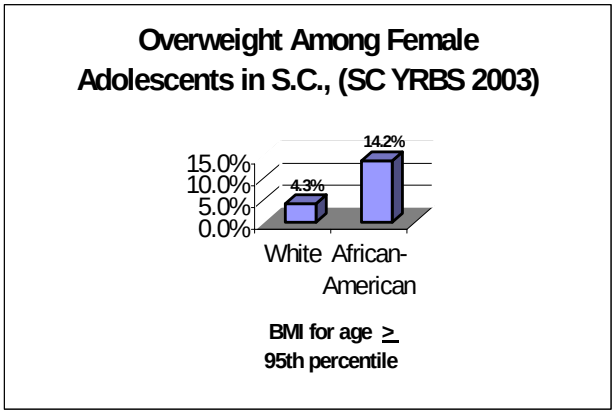


Figure 9

South Carolina: Children

South Carolina currently lacks comprehensive ***surveillance data*** for children younger than high school age. Data are available for the state's ***Women, Infants, and Children*** (WIC) program participants birth to 5 years old. Data for these children are reported by states to the CDC through the ***Pediatric Nutrition Surveillance System*** (PedNSS). A limitation of this data is that it can only be generalized to children five-years old and younger who meet the WIC eligibility requirements. Therefore, the data are not representative of all children under age 5 in South Carolina. Based on the number of WIC participants currently enrolled in South Carolina, the data represents approximately 50% of children from birth to 5 years.

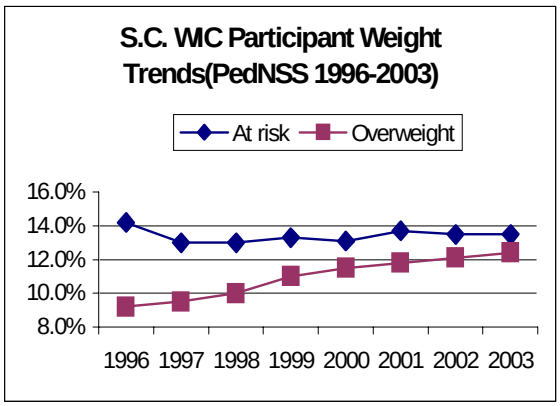


Figure 10

In South Carolina, at least one out of every four low-income children (ages 2-5) is overweight or at risk of overweight. In 1996, there was a considerable gap between the percentages of children in WIC who were at risk of overweight compared to those that are overweight. However, the trend lines from 1996 to 2003 indicate that the gap has narrowed. Similar to adult obesity trends, the prevalence of overweight in children has increased more than the prevalence rates for those at risk of overweight. (PedNSS 2003)

There are also notable racial/ethnic differences in weight status among WIC participants: a larger proportion of Hispanic (17.1%) children aged two to five years old are at risk of overweight as compared to white (13.2%) and African-American (13.0%) children in the same age range. In addition, there are more Hispanic (17.9%) children who are overweight as compared to white (11.1%) and African-American (12.3%) children.

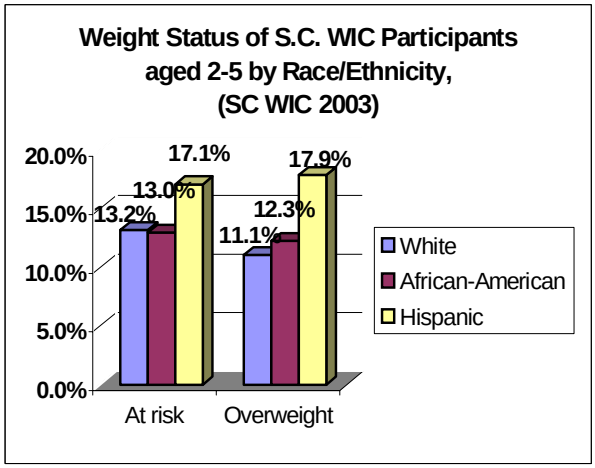


Figure 11

Nationally, overweight rates in children ages 6-11 have tripled since the 1970s while rates for adolescents ages 12-19 have more than doubled in the same time period.

(Centers for Disease Control, National Center for Health Statistics, 2000. NHANES IV Short Report.)

Genetics

The influence of genetics on the development of obesity is an area of active research, but there are still many unknowns. Genetics does play a role in obesity. However, it is unlikely that human genes could have changed quickly enough to account for the significant increases in obesity rates of the last few decades. The complex interaction of genetic, environmental, cultural, and behavioral factors has likely contributed to this dramatic increase in obesity prevalence.

Lifestyle Factors

Overweight and obesity are a result of an imbalance between caloric intake and caloric expenditure. Healthy lifestyles that include regular physical activity and good eating habits are the most effective way to prevent overweight and obesity; however, these goals are often difficult for people to achieve in today's society.

Physical Activity

Engaging in regular physical activity is one of the most important steps anyone can take to build physical and mental health, including maintenance of healthy weight. Physical activity provides benefits at even moderate levels of intensity that are within the capability of most individuals – activities like gardening or walking in the neighborhood. Yet, 45.9% of U.S. adults do not meet current recommendations for regular physical activity, putting them at risk for a score of chronic diseases and conditions *(BRFSS 2003)*.

Major shifts in social and environmental conditions have triggered a rise in both inactivity and increased weight. Society has become increasingly suburbanized, and people are more inclined to drive than use active means of transportation. Work environments have shifted from a labor-based to service-based economy, which means that daily work has become more sedentary.

> It has been hypothesized that labor saving devices have contributed to decreased caloric expenditure. A recent study demonstrated that daily tasks such as clothes washing, dish washing, walking to work and stair climbing, which are now mechanized, contribute to the positive energy balance in our society.
>
> (Lanningham-Foster et al., 2003)

The ability to be physically active is partly dependent on how the community environment is designed and supported. The "environment" encompasses the structure and layout of neighborhoods, sidewalks and adequate lighting, walking or biking trails, and safety from traffic and crime.

Among children, competing academic priorities have resulted in less time for physical activity during school hours, both at recess and in physical education classes. Children are becoming increasingly sedentary and are spending hours each day in front of televisions and computer screens, rather than playing outdoors. Studies show that children now spend an average of 25% of their waking hours in front of the television or computer *(Kaiser, 2003).*

Although regular physical activity is important for all age groups, emerging evidence suggests that regular physical activity is also crucial for older adults to maintain and improve their quality of life. Physical activity helps maintain strong bones and muscles while also preventing falls. Studies also suggest that, even in older adults, regular physical activity may delay or prevent chronic diseases, such as arthritis, and reduce overall death and hospitalization rates *(Exercise: A Report From the National Institute on Aging, NIH, 2001).*

South Carolina: Adults

Over half of all South Carolinians do not participate in the recommended amount of daily ***moderate*** or ***vigorous physical activity.*** For those that do meet the recommended amounts of moderate ***or*** vigorous physical activity, Whites have the highest rate (48.9%), followed by Hispanics (42.9%), with the fewest African-Americans meeting the recommendations (37.1%) *(BRFSS 2003).*

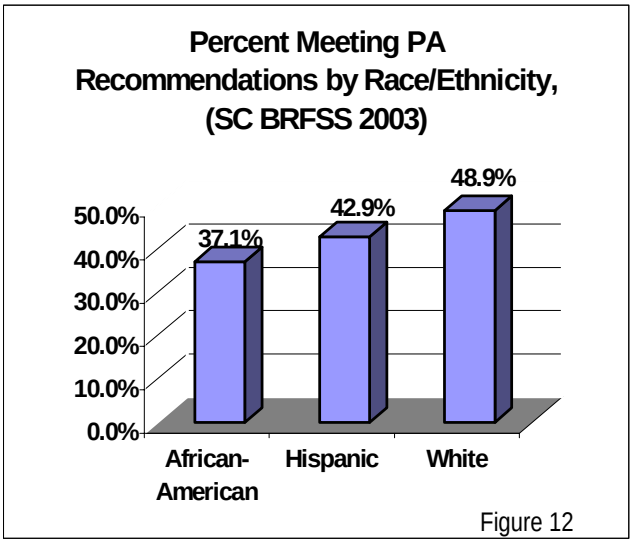


Figure 12

Recommendations are that children and adolescents participate in at least 60 minutes of moderate intensity physical activity most days of the week, preferably daily.

More disturbingly, 14.8% of all adult South Carolinians (regardless of race/ ethnicity) are considered physically inactive, meaning that they engage in no regular physical activity at all. This puts them at greatest risk for obesity and other chronic conditions.

National Physical Activity (PA) Guidelines: Moderate PA for at least 30 minutes on 5 or more days per week OR vigorous PA for at least 20 minutes on 3 or more days per week.

~

The rate of insufficient physical activity in South Carolina's youth was 10% higher than the national average.

South Carolina: Adolescents and Children

Physical activity is a critical factor in lifelong health. Only 60.0% of high school students meet recommendations for regular physical activity. Male students are slightly more active than females (66.1% vs. 54.0%). African-American and Hispanic students are less active than white students: 66.4% of white students meet the recommendations for regular physical activity, compared to 60.9% for Hispanic students and 52.9% for African-American students *(YRBS 1999).*

Nutrition

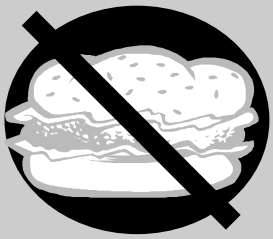
Along with adequate physical activity, good nutrition is another cornerstone of healthy living. This includes eating more whole grains, more fruits and vegetables, limiting calories from fat, and limiting total calories per day. According to the Healthy Eating Index for 1999-2000, only 10% of Americans eat a healthy diet consistent with federal nutrition recommendations. Consuming a calorie-dense diet, along with sedentary lifestyle patterns, are now typical behaviors for most Americans and are contributing factors to the obesity epidemic *(Bowman 1998).*

In recent years, the availability and accessibility to high calorie foods has increased significantly. Americans are eating food prepared away from home more than ever. Food eaten outside of the home tends to be less healthy, providing more calories, sugar, sodium, and fat than food prepared in the home. In 1970, households spent 26% of their total food spending on food-away-from-home; by 2002, this percentage had increased to 46% (*USDA Economic Research Report 4, 2005).*

In America, average daily calorie consumption increased by 300 calories between 1985 and 2000.

(USDA Economic Research Service)

During this same time period, portion sizes have increased dramatically. The most glaring example is the notorious "super-sizing." According to CDC, portion sizes began to rise in the 1970s, increased in the 1980s, and have grown ever since. For example, in 1957, the typical serving of soda was 8 fluid ounces. A typical serving size of soda is now 32 to 64 fluid ounces. During this time period, there has also been a steady rise in the prevalence of obesity *(CDC, 2003).*



Eating breakfast is an important lifestyle habit for healthy weight maintenance; skipping breakfast can lead to snacking and overeating later in the day. A recent study of young adults found that obesity and insulin resistance syndrome rates were 35% to 50% lower among people who ate breakfast every day compared to those who usually skipped breakfast. The report suggested that eating breakfast might have beneficial effects on appetite, insulin resistance and energy metabolism *(American Heart Association, 2003).*

Consumption of low-fat dairy products is another important part of a healthy diet. Dairy products are the richest sources of calcium in the diet and current recommendations are for 3 servings of dairy each day. Although additional research is needed, recent studies have begun to identify a possible link between consuming dairy foods and healthy weight maintenance and even weight loss in adults.

Nutrition - South Carolina: Adults

Fewer than one in four South Carolina adults consume at least five or more servings of fruits and vegetables daily as recommended for good health. Hispanics are more likely to meet these guidelines (27.8%) than Whites (22.7%) or African-Americans in the state. (19.5%) *(BRFSS, 2003).*

Nutrition - South Carolina: Adolescents and Children

Although South Carolina adults are not consuming adequate fruits and vegetables, even fewer South Carolina high school students are meeting the recommended five or more servings of fruit and vegetables each day. Less than one in five high school students consume this recommended amount for good health. This is consistent for both males and females, but there is variation among racial/ethnic groups: more African-American and Hispanic students (20.6% and 20% respectively) consume the recommended servings of fruits and vegetables each day than white students (13.9%) *(YRBS 1999).*

In addition to identifying intake of fruits and vegetables, YRBS assesses two other nutritional behaviors that may play a role in establishing and maintaining a healthy weight: eating breakfast and milk consumption. Unfortunately, 41.4% of adolescents in the state do not eat breakfast during a school week. More African-Americans (43.7%) report not eating breakfast than Whites (39.6%) or Hispanics (37.9%)*(YRBS 1999).*

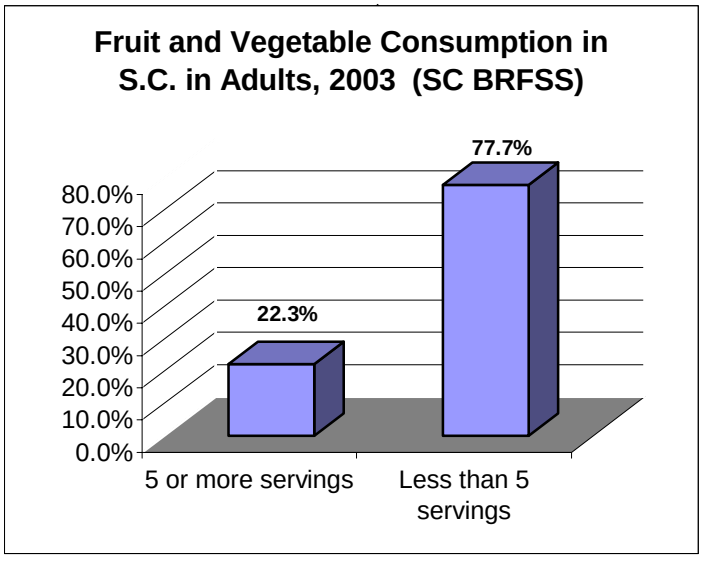


Figure 13

Only 12.1% of South Carolina youth drink 3 glasses of milk per day. Hispanic children are more likely to consume 3 glasses of milk daily (20.0%) compared to Whites (13.3%) and African-Americans (9.9%) *(YRBS 1999).*

Another lifestyle factor that influences both physical activity levels and nutritional behaviors is screen time. Children who are watching television or playing computer games are not being physically active, and national research confirms a positive independent relationship between screen time and the prevalence of overweight in children *(CDC, 2003).* Additionally, more than half of television advertising to children promotes high calorie, high fat, and high sugar foods and beverages, such as fast food, snack foods, soft drinks, candy, and sugar-sweetened cereals. In the 1970s, a child watched about 20,000 commercials per year. This amount has increased dramatically; a child now watches more than 40,000 television commercials each year. Since exposure to television advertising can influence food and beverage choices, these unhealthy dietary choices along with sedentary time while watching television can lead to energy imbalance and weight gain *(IOM).*

American children watch television an average of 1,023 hours per year, as compared to 900 hours being spent in school. By the age of 17, a child has spent 38% more time in front of the TV than in school.

(Neilson Media 2003)

It is recommended that children engage in two hours or less of entertainment from television/ computer/video games. Almost half (47.5%) of 1999 YRBS respondents in the state report three or more hours of sedentary time per school day from television alone.

The American Academy of Pediatrics recommends that children watch no more than 2 hours per day of entertainment from television/ computer/video games sources.

Breastfeeding

A growing body of evidence suggests breastfeeding offers protection against childhood overweight. Although the exact mechanisms are still under investigation, theories regarding this protective link between breastfeeding and lower rates of obesity include (HHS Blueprint for Action on Breastfeeding):

The American Academy of Pediatrics and numerous other health organizations recommend exclusive breastfeeding for the first six months of life.

- Breast-fed Infants have more self-control over when and how much they eat; this early regulation of food intake may be important for establishing long-term appetite regulation patterns.
- Breastfeeding babies experience a variety of tastes through breast milk, which may help in acceptance of a greater variety of food when solids are started; this greater variety in the diet may help in establishing long-term healthier eating patterns.
- Breast-fed babies' biological adaptations during breastfeeding may help defend against later energy imbalance.

Overall rates of breastfeeding have increased, and breastfeeding initiation is near the national goal of 75%. However, African-American mothers and lower or low-income mothers continue to consistently have the lowest breastfeeding rates.

A minimum of $3.6 billion could be saved if exclusive breastfeeding increased from current levels to Healthy People 2010 recommended levels.

(Weimer, J. "The Economic Benefits of Breastfeeding: A Review and Analysis." March 2001)

Despite the documented health benefits of breastfeeding for babies and mothers, along with the potential protection against overweight and obesity, breastfeeding duration rates remain low. National data show that only 15% of white mothers, 13% of Hispanic mothers, and 10% of African-American mothers exclusively breastfeed their babies for at least six months as recommended by the American Academy of Pediatrics and other health professional organizations.

The Institute of Medicine report 'Nutrition During Lactation' defines exclusive breastfeeding as the consumption of human milk as the sole source of energy, and partial breastfeeding when breastfeeding is supplemented with formula, other foods, or both.

In South Carolina, less than 57% of new mothers ever breastfeed their babies, 27.3% are still breastfeeding at six months, and only 13.6% are exclusively breastfeeding at six months (*2003 National Immunization Survey*).

Impact of Weight on Chronic Diseases and Conditions

Individuals who are overweight or obese have increased odds of developing a chronic disease. Those who are obese are at the greatest risk. Obesity is associated with more than 30 major diseases, including diabetes, high blood pressure, coronary heart disease, stroke, and certain types of cancer (such as endometrial, breast, prostate, and colon).

Obesity is related to about:

- ***Two-thirds of Type 2 Diabetes***
- ***Two-thirds of heart disease***
- ***15% of cancer in men and 20% of cancer in women***

  (CDC 2005)

When assessing the most severe cases of obesity, Class III obesity rates have increased almost 3-fold from 1990 to 2000. Individuals with clinically severe obesity have twice the risk for all-cause mortality compared to people with Class I obesity. In addition, 75% of adults with clinically severe obesity have at least one co-morbid condition, such as diabetes or high blood pressure. African-American women and those with low educational levels have the highest rates of Class III obesity. When looking at age, 18 to 29 year olds have had the highest increase in rates of Class III obesity (JAMA, 2002).

Metabolic syndrome refers to a cluster of disorders that dramatically increases the likelihood to develop Type 2 Diabetes, heart disease or stroke. Metabolic syndrome affects almost a quarter of the American population. Risk factors for metabolic syndrome include obesity, high blood pressure, high insulin levels, and abnormal cholesterol levels. Although the exact cause of metabolic syndrome is not known, most researchers believe it is caused by a combination of genetic makeup and lifestyle choices – with being overweight and inactive as major contributors.

Obesity is a greater trigger for health problems and increased health spending than smoking or drinking. Individuals who are obese have 30% to 50% more chronic medical problems than those who smoke or drink heavily.

(The Effects of Obesity, Smoking, and Drinking on Medical Problems and Costs, Health Affairs, March/April 2002)

Overweight children and adolescents are also more vulnerable to chronic diseases, such as heart disease, high blood pressure, and particularly Type 2 Diabetes. Nationally, over the past ten years, the prevalence of diabetes has increased by more than 50% and over the next 50 years, it is projected to increase by another 165 percent (TFAH 2004).

If current trends continue, one out of every three children born in 2000 will be diagnosed with Type 2 Diabetes, primarily due to poor diet and a lack of physical activity *(Vehkat Narayan, K. JAMA, 2003).*

Children who develop Type 2 diabetes at a young age lose 20-28 "life years," and 28-35 "quality adjusted life years" *(Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity, DHHS, 2001).*

Among overweight 5-10 year olds, 60% already have at least one cardiovascular disease risk factor.

(Pediatrics, 2003)

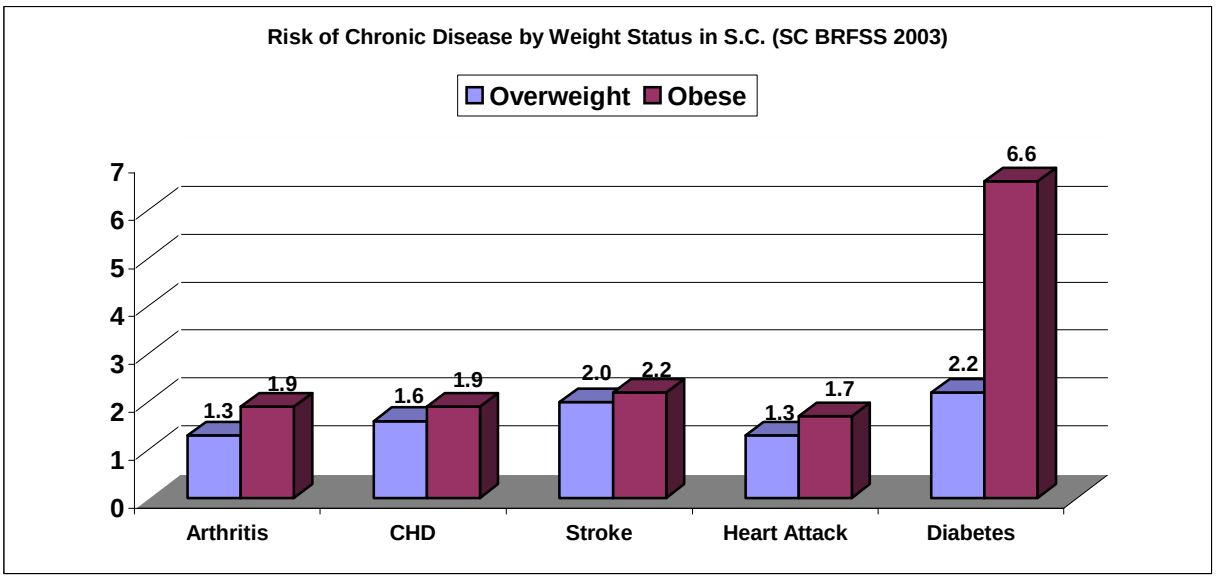


Figure 14

In SC, individuals who are obese are almost twice as likely to develop arthritis, coronary heart disease and stroke, over one and a half times more likely to have a heart attack, and *over six and a half times more likely to have diabetes* than those in the normal weight range *(BRFSS, 2003).* *(Figure 14)*

SC PREVALENCE RATES:

- **4th in the nation for diabetes**
- **2nd in the nation for diabetes among African-Americans**
- **3rd in the nation for rates of prostate cancer**
- **2nd in the nation for rates of stroke death**

(BRFSS, 2003)

Selected Chronic Diseases by Weight Status in South Carolina			
	Normal Weight (BMI <25)	**Overweight (BMI 25—29.9)**	**Obese (BMI ≥30)**
Arthritis	**24.9%**	**30.1%**	**38.8%**
Diabetes	**3.7%**	**20.3%**	**20.3%**
Coronary Heart Disease	**3.3%**	**6.3%**	**6.3%**
Heart Attack	**3.3%**	**4.4%**	**5.4%**
Stroke	**1.6%**	**3.2%**	**3.6%**

Figure 15

Quality of Life

Obesity and obesity-related chronic conditions can lead to decreased quality of life, which is a problem among all populations.
A significant percentage of obese individuals do not rate their general health as excellent or very good as compared to those with lower BMI.

Severely obese children have reported an even lower quality of life than children with cancer undergoing chemotherapy (TFAH, 2004).

A significantly higher percentage of South Carolinians report excellent general health as compared to those who are obese. Similarly, a significantly more obese SC residents report fair or poor health as compared to those who are at a healthy weight.

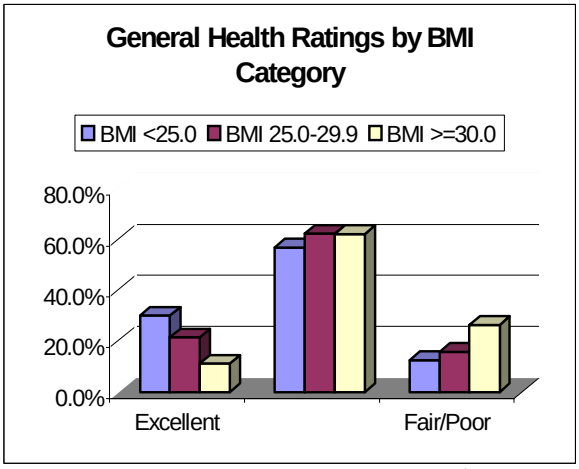


Figure 16

Obese individuals in the state also report a significantly higher average of physical or mental health days that were not good as compared to those with a lower BMI *(BRFSS 2003).*

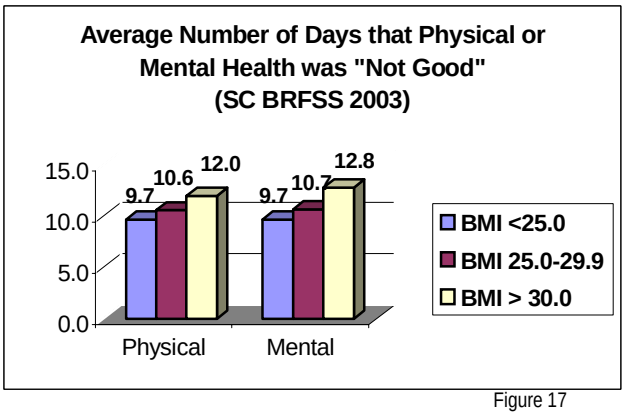
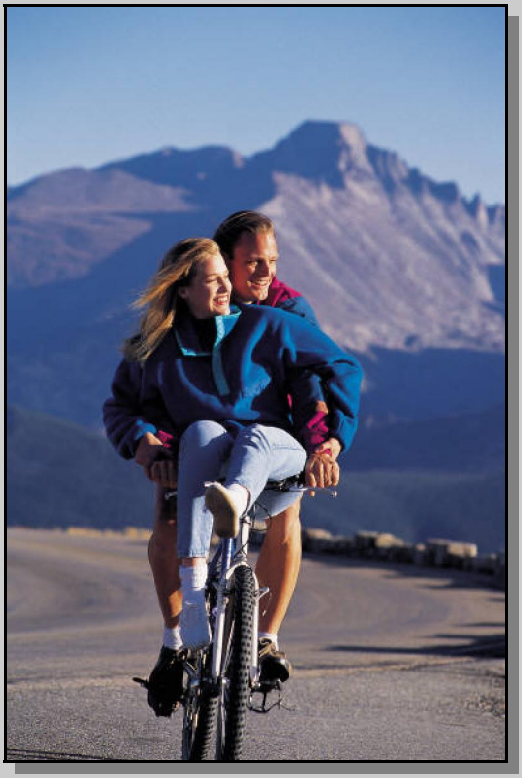


Figure 17



Impact of Overweight and Obesity: Economic Costs

"Obesity has become a crucial health problem for our nation... The medical costs alone reflect the significance of the challenge."

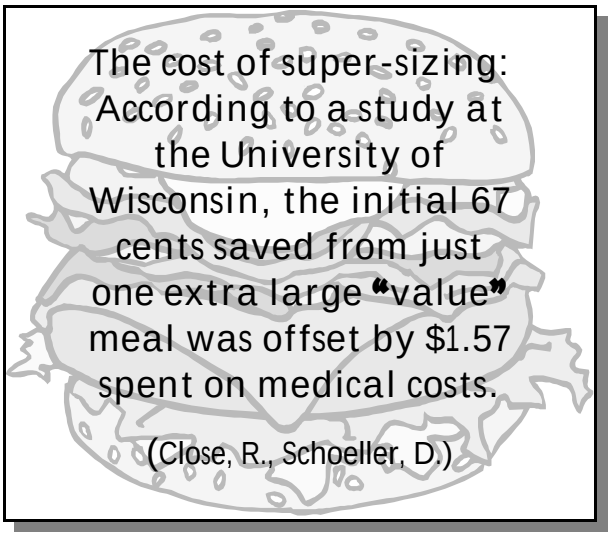
Tommy Thompson, Former U.S. Secretary of Health & Human Services

In recent years, researchers have documented the impact that obesity has on health care and related costs. The total cost of obesity in the United States was $117 billion in 2000.

Health care costs for obese individuals average 36% more than for people of normal weight. Obesity-attributable medical expenditures were estimated at $75 billion in 2003. (Finkelstein, et al, 2004).

In South Carolina, the obesity-attributable medical expenditures were estimated at $1.06 billion in 2003. More than half of these expenses were paid by taxpayer dollars through the Medicaid and Medicare programs.

Along with the impact of obesity to health care costs, employers of all sizes feel the impact of this enormous burden. The cost of obesity-related health problems to U.S. businesses in 1994 were almost $13 billion (with approximately $8 billion of this for health insurance expenditures, $2.4 billion for sick leave, $1.8 billion for life insurance, and close to $1 billion for disability insurance) *(DHHS, 2003).*



The cost of super-sizing: According to a study at the University of Wisconsin, the initial 67 cents saved from just one extra large "value" meal was offset by $1.57 spent on medical costs.

(Close, R., Schoeller, D.)

According to the USDA, healthier diets could prevent at least $71 billion per year in lost productivity, medical costs, and lost lives

(ERS, USDA, Agriculture Information Bulletin No. 750, 1999)

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It has been estimated that if all physically inactive Americans became active, approximately $77 billion in annual medical costs would be saved

(Pratt, The Physician and Sports Medicine 2000)

Health Disparities

The National Institute of Health defines ***health disparities*** as: "*differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States."* Population groups can be defined by factors such as race, ethnicity, age, gender, and socioeconomic status.

Overweight and obesity prevalence is higher among people of lower socioeconomic status (defined by an income at or less than 130 percent of poverty). Women of lower socioeconomic status are about 50 percent more likely to be obese than those at higher economic levels. For reasons that are unclear, prevalence rates among men do not vary significantly by socioeconomic group *(BRFSS, 2003).*

Low-income families often consume lower-cost foods with relatively higher levels of calories when they lack resources to purchase a healthier balance of more nutritious food. Households often reduce food spending by changing the *quality* of food consumed before they reduce the *quantity* of food eaten. The Food Research and Action Center reported SC ninth among states in food insecure households: those who are unable, for financial reasons, to enjoy sufficient diet at all times *(FRAC 2003).*

South Carolina's demographics suggest that the burden of overweight and obesity will continue to increase. Almost 34% of the population, or 1.4 million people, belong to a racial or ethnic minority. African-Americans constitute approximately 30 percent of the state population (a 14% increase over the last decade), and the Hispanic population of South Carolina has more than doubled in the past decade *(SC DHEC).*

According to surveillance data, minorities in SC are disproportionately affected by overweight and obesity:

- Overall, 72.3% of African-Americans in South Carolina are overweight or obese, compared to 55.7 % of Whites.
- African-Americans are especially at risk for obesity, with 37.8% of African-American adults classified as obese, compared to 20.4% of white adults.
- Obesity levels are dramatically higher among African-American women: 44.8% of African-America women are obese compared to 19.0% of white women.
- Among high school females, the overweight rate for African-American females is more than three times higher than for white females (14.2% vs. 4.3%).
- More Hispanic children, ages 2 to 5, are overweight (17.9%) compared to African-American (12.3%) children, or white (11.1%) children.

14.1% of the population in South Carolina is below poverty as compared to 12.4 percent of the U.S. population